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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,002	03/31/2004	Chih-Kuang Chen	SUND 506	5214
23995	7590	03/26/2007	EXAMINER	
RABIN & Berdo, PC 1101 14TH STREET, NW SUITE 500 WASHINGTON, DC 20005			AMADIZ, RODNEY	
ART UNIT		PAPER NUMBER		
2629				
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	03/26/2007	PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/813,002	CHEN, CHIH-KUANG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Rodney Amadiz	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 31 March 2004.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-9 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-5, 7 and 8 is/are rejected.

7)  Claim(s) 6 and 9 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 31 March 2004 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All    b)  Some \* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9/14/06.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_\_

## DETAILED ACTION

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Objections***

2. Claim 8 is objected to because of the following informalities: Pg. 23, line 5, please delete the first "of". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen (U.S. Patent 5,479,187—herein referred to as "Chen").

As to **Claim 1**, Chen teaches a liquid crystal display comprising: a scan driver circuit for outputting a scan activating signal (***Figs. 1 and 2, Reference Number 43***); a liquid crystal display panel for receiving the scan activating signal to generate a frame display frequency accordingly (***Col. 3, line 50—Col. 4, line 25***); a rotation speed control circuit for receiving a scan activating signal to control a rotation speed of a motor accordingly (***Fig. 3, Reference Number 26 and Col. 5, lines 7-33—note motor is***

*inherent to spin reflector*); and a polygonal column reflector connected to the motor for synchronizing with the rotation of the motor using the center line of the column of the polygonal column reflector as an axis of rotation (See *Figs. 3-9, Reference Numbers 22 (Reference Number 36 for Figs. 7-9)*, wherein the rotation speed of the polygonal column reflector corresponds to the frame display frequency(*Col. 5, lines 22-33*), moreover, the polygonal column reflector has a plurality of reflecting side faces which sequentially reflect the light of a light source onto the liquid crystal display panel along with the rotation of the polygonal column reflector (*Fig. 3, note multi-faceted reflecting faces 22a-22f and Col. 4, lines 47-55*); wherein the reflected light of each of the reflecting side faces scans the liquid crystal display panel from one end of the liquid crystal display panel to one opposite end of the liquid crystal display panel along with the rotation of the polygonal column reflector so that light required for each frame display is provided (*Col. 5, line 54—Col. 6, line 25*).

As to Claim 2, Chen teaches the polygonal column reflector further comprising a column body with a plurality of body side faces (See *Fig. 3, Reference Number 22 and faces 22a-22f*); and a plurality of reflecting materials disposed onto the body side faces, respectively (*Col. 9, lines 54-57*).

As to Claim 4, Chen teaches that the reflecting materials are a plurality of reflecting mirrors (*Col. 9, lines 54-57*).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen.

As to Claim 5, Chen fails to teach a hollow column body. However, the specification shows no apparent benefits for having the column body with a hollow inside. Therefore, having the column body being hollow is clearly a design choice based on the specific requirement of the claim. Furthermore, it would have been obvious to one of ordinary skill in the art to include any type of column body, including a column body that is hollow inside, into the liquid crystal display taught by Chen since any column body would work well at rotating the reflecting materials.

As to Claim 8, all of the limitation have already been discussed with respect to claim 1 with the exception of the liquid crystal display comprising a plurality of rotation speed control circuits and a plurality of polygonal column reflectors. Chen only teaches one rotation speed control circuit and one polygonal column reflector. Chen fails to teach a plurality of rotation speed control circuits and a plurality of polygonal column reflectors. Examiner cites *St. Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977) to teach that it is well known and obvious to duplicate parts for a multiplied effect. At the time the invention was made, it would have been obvious to a person of

ordinary skill in the art to provide a plurality of rotation speed control circuits and a plurality of polygonal column reflectors in the liquid crystal display taught by Chen to create a brighter display as supported by the case law stated above.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Ang (U.S. Patent 5,126,873—herein referred to as “Ang”).

As to Claim 3, Chen fails to teach that the reflecting materials are a plurality of aluminum slices. Examiner cites Ang to teach a polygonal reflector made of aluminum (*Col. 4, lines 17-18*). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to provide aluminum slices as taught by Ang in the polygonal column reflector taught by Chen in order to provide a reflector that is durable.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Yamagishi et al. (U.S. Patent 6,511,184—herein referred to as “Yamagishi”).

As to Claim 7, Chen fails to teach a convex lens disposed between the light source and the polygonal column reflector for focusing the light from the light source on the reflecting side faces. Examiner cites Yamagishi to teach a convex lens disposed between the light source and the polygonal column reflector for focusing the light from the light source on the reflecting side faces (*Fig. 1, Reference Numbers 210R, 210B, 210G*). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the use of a convex lens disposed between the light source and the polygonal column reflector as taught by Yamagishi in the liquid

crystal display taught by Chen in order to focus the light form the light source on the reflector (*Yamagishi—Col. 11, lines 47-65*).

***Allowable Subject Matter***

9. Claims 6 and 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Inquiries**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney Amadiz whose telephone number is (571) 272-7762. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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